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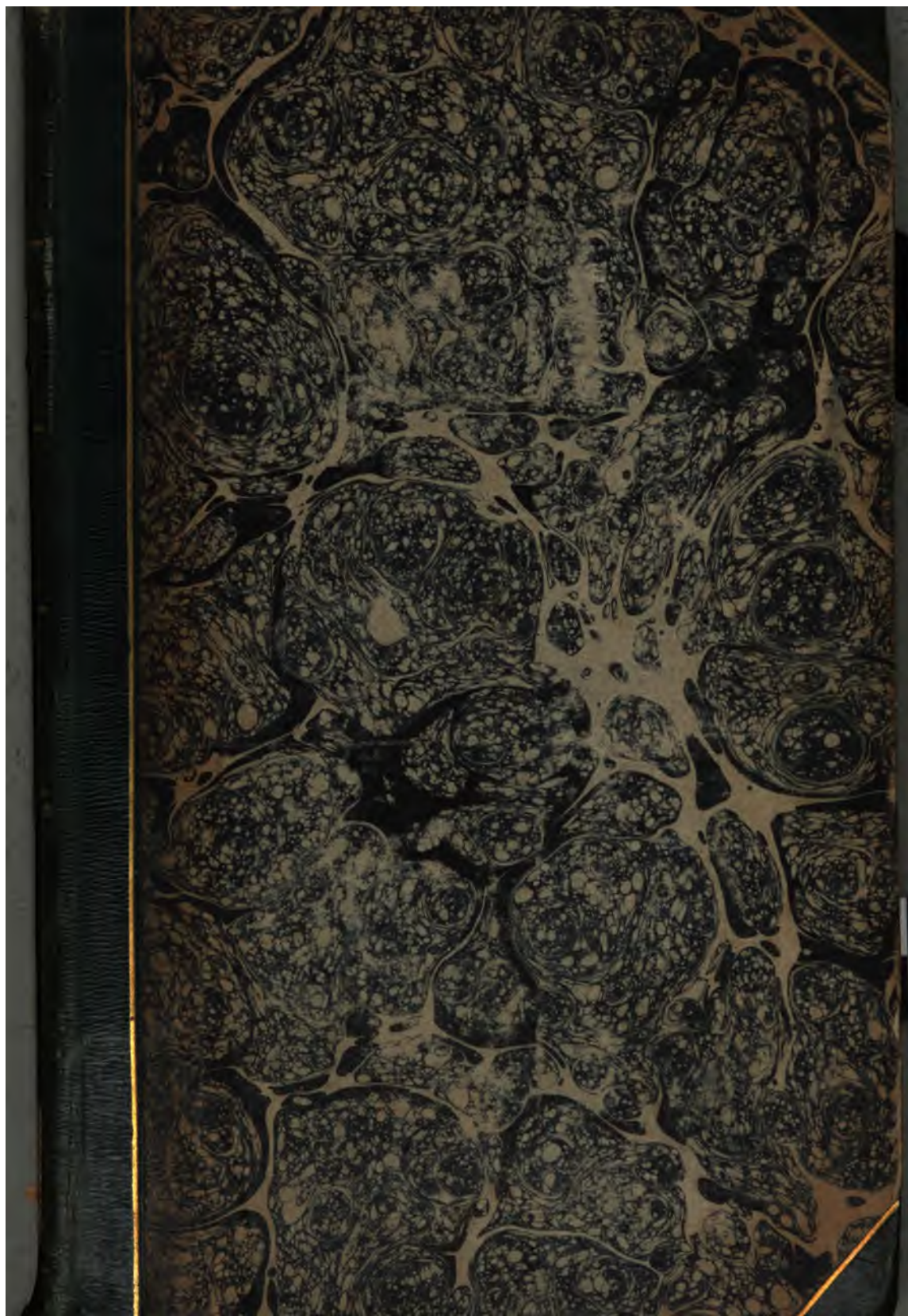
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SKETCH  
OF  
LECTURES  
ON  
ARTIFICIAL OR SOWN GRASSES,  
AS

LUCERN, SAINT-FOIN, CLOVERS, TREFOILS,  
VETCHES, &c. &c.

DELIVERED IN THE  
DUBLIN SOCIETY'S BOTANICAL GARDEN,  
GLASNEVIN.

BY  
WALTER WADE, ESQ. M. L. S.

OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND, PHYSICIAN  
TO THE DUBLIN GENERAL DISPENSARY, HONORARY MEMBER OF THE  
DUBLIN SOCIETY, APOTHECARY'S HALL, AND FARMING SOCIETY OF  
IRELAND; PROFESSOR AND LECTURER ON BOTANY TO THE  
ROYAL COLLEGE OF SURGEONS IN IRELAND, AND TO  
THE RIGHT HONORABLE AND HONORABLE THE  
DUBLIN SOCIETY.

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"Hinc fessæ pecudes pingues per pabula læta  
Corpora deponunt, et candens lacteus humor  
Uberibus manat distentis."                      LUCRETIVS.

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PRINTED BY GRAISBERRY AND CAMPBELL,  
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1808.









## PREFACE.

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THE nature and composition of soils being at this day more properly understood than formerly, and the effects of the various substances, that are used in cultivation, being more clearly defined by our knowledge, and a just application of other sciences, particularly chymistry and botany; extensive improvements have taken place in the important business of tillage; however a great deal more yet remains to be effected in almost every branch of husbandry, particularly in this kingdom; for, we must see, that a very trifling portion even of the cultivated part of Ireland has at this enlightened period been managed judiciously and profitably; many parts exhibit extensive tracts of rich and fertile land, which, it is much to be regretted, are very defectively and unskilfully conducted. Even in Great Britain, where riches and wealth so much abound, that able and judicious writer, Sir John Sinclair, states “ that Great

A 2

Britain

Britain contains sixty-seven millions of acres, seven millions of which are taken up by houses, roads, rivers, lakes, &c. and consequently incapable of cultivation; and that, of the remaining sixty millions, only five millions are employed in raising grain, and twenty-five millions in pasturage, *while thirty millions are either in a state of waste, or cultivated under a very defective state of husbandry.*" This defect we may fairly attribute, in a great measure, to a want of a better and more complete knowledge of the different branches of science, which are closely connected with agriculture among practical farmers; and it is lamentable to observe, that the very slow progress, which many useful arts have made, proceeds from a want of that coalition, which should subsist between scientific and practical men; the latter too frequently holding in contempt the speculations of the man of science, whilst the former has most reprehensibly looked upon the simple practitioner with indifference. The highly important art of husbandry, amongst other arts, has suffered heretofore materially by this circumstance, the want of a proper intercourse and communication of sentiment between both parties.

But





But it is to be hoped, that the scene is now changed, and that agriculture, the first and the most useful of all the arts, is fixed on a firm foundation, by establishing it on rational and philosophical principles. We have every reason now to expect, that the profession of agriculture will be as honourable amongst us, as it was once amongst the ancient Romans; since some of the first-rate and most distinguished characters in the land, as to talent and station, have condescended to turn their thoughts to the important object of agriculture.

The interest, which the Dublin Society has, upon all occasions, evinced to unite science with agriculture, rural economy, and the useful arts, must, by this time, be gratefully acknowledged and felt by the public—they have directed their different professors to disseminate their knowledge in their respective capacities on the most extended, liberal, and useful plan of education, in order that science may go hand in hand with the useful purposes and accommodations of life, and, if possible, to render its various branches intelligible, and of use to the meanest capacity.

CHEMISTRY.



## CHYMISTRY.

And first chymistry, which may justly be called the foundation stone of all the arts and sciences, is absolutely necessary for every person engaged in rural affairs to be competently acquainted with; it will furnish him with the best means of preparing nourishment for his respective crops, and enable him occasionally to satisfy himself as to the hidden mysteries of nature—the principles of agriculture depend most highly on chymical knowledge, and without principles what is art, and what is science?

## NATURAL PHILOSOPHY.

A knowledge of natural philosophy, or, more properly speaking, mechanical philosophy, will enable the agriculturist to judge of the most proper instruments he should employ in dividing and loosening the soil, an operation of the greatest benefit to the farmer, and besides this knowledge will materially assist him in planning any piece of mechanism, which it may be thought necessary to employ with advantage in rural affairs.

## VETERINARY





**VETERINARY ART.**

Every person should be well acquainted with the veterinary art—for, if our domestic animals, e. g. horned cattle, horses, sheep, swine, &c. nay, our poultry are necessary for our comforts and accommodations, and of which there can be no doubt, the best and most rational plan of reducing into a regular system a knowledge of their structure and functions, the preservation of them in health, an acquaintance with their diseases, and the most likely means of removing them, must be a very desirable, and a highly valuable national object.

**BOTANY.**

The dependence, which agriculture has on botany, is self-evident, as will be more clearly and satisfactorily proved during the progress of the present sketch, which is to be considered as a summary account, by way of heads, of the most important facts adduced on the interesting subject of **ARTIFICIAL or SOWN GRASSES.**

**As**

As in the "*Sketch of Lectures on Meadow and Pasture Grasses*"—coloured figures of the different objects, noticed in this Sketch, will throughout be referred to.

## ABBREVIATIONS





## ABBREVIATIONS EXPLAINED.



*Fl. Lond.* Flora Londinensis.—By Wm. Curtis,  
London, 2 vols. folio.

*Eng. Bot.* English Botany.—By J. E. Smith,  
M. D. and James Sowerby, F.L.S. London,  
25 vols. &c. 8vo.

*Fl. Rust.* Flora Rustica.—By Thomas Martyn,  
B. D. F. R. S. &c. and Frederick P. Nodder,  
London, 4 vols. 8vo.

*Cat. Syst. Dub.* Catalogus Systematicus Plantarum  
Indigenarum in Comitatu Dublinensi in-  
ventarum.—Auctore Gualtero Wade, M. D.  
&c. Dublini, 1794, 1 vol. 8vo.

*Bot. Mag.* Curtis's Botanical Magazine, London,  
26 vols. &c. 8vo.

*Ast. Decand.* Astragalogia—Augustini Pyrami  
Decandolle—Parisiis, Ann. 1802.

## INTRODUCTION.









## INTRODUCTION.

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A GENERAL view of what are called papilionaceous, pea-flower, or leguminous plants—a class of vegetables of much importance, and highly interesting in many points of view—for the present, their immediate subserviency to agricultural purposes, and the feeding of cattle in particular.

In the artificial or sexual system of the great Linnæus—belong to a class called Diadelphia, and to the order Decandria of this class—both terms explained—consists of herbaceous annuals, or perennials, or woody, of the tree and shrub kind—generally mucilaginous—afford a clammy liquor, which dries and hardens like gum—some possess dangerous qualities—*Astragalus galegiformis*,\* or goat's rue-leaved milk vetch—remarkably caustic.

*Abrus precatorius*, Jamaica wild liquorice, seeds asserted to be a rank poison?—*Lathyrus sativus*,†  
blue

\* *Astrag. Decandolle*, 133. 51.

† *Bot. Magazine*, t. 115.

blue chickling vetch—a native of Spain—extraordinary qualities attributed to it by some of the most respectable authorities—flour of the seeds, made into bread, brought on an incurable rigidity of the limbs—many animals, particularly swine, shared the same fate, by being fed on the seeds of this vetch, or pulse exclusively—edicts issued against the cultivation of it in Saxony and Florence. *Indigofera tinctoria*, Indigo—prohibited during the reign of Queen Elizabeth, &c. as highly poisonous—of a corrosive quality—the chymical decomposition of indigo at this day seems to render it of a very suspected nature.

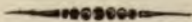
In general, the plants of this class and order are innocent—many of them very acceptable, nutritious, and valuable food for cattle.

ARTIFICIAL,





## ARTIFICIAL, OR SOWN GRASSES.



### *Hedys'arum Onob'rychis,*

Saint-foin, cock's-head.

Irish name, BLASGHEATHUR CODOG.

Fl. Ruft. t. 47. Eng. Bot. t. 96.

Ἠδύσῃον of Theophrastus and Dioscorides, from  
Ἠδύσμα sweetness, and ἄρον ointment.

Never has been found in an actual wild state in Ireland?—on many of the chalky hills in England—has long been cultivated in several parts of Europe for feeding cattle—Mr. Lisle speaks of it in 1703—valuable food for cows—known to produce two tons an acre for fourteen or fifteen years—grows on the poorest soils—the different species and varieties of calcareous soils best suited to—is it the most nutritious food for horses?—Quantity of seed to be sown with clover—“Statistical Report of the County Kilkenny”—flowers afford a very favourite food for bees—other interesting particulars as to the cultivation of saint-foin



foin in the county of Kilkenny—"County Cavan Report"—artificial grasses not successfully cultivated—the reasons, offered for the failure of saint-foin, don't seem to be well founded.

"County of Dublin Report"—Mr. Dutton—Saint-foin little noticed.

Cultivation of saint-foin hardly known in Ireland—highly important to be recognised by the farmer—has many advantages over clover as pasturage—swelling of cattle, who feed on it, does not occur, as in clover.

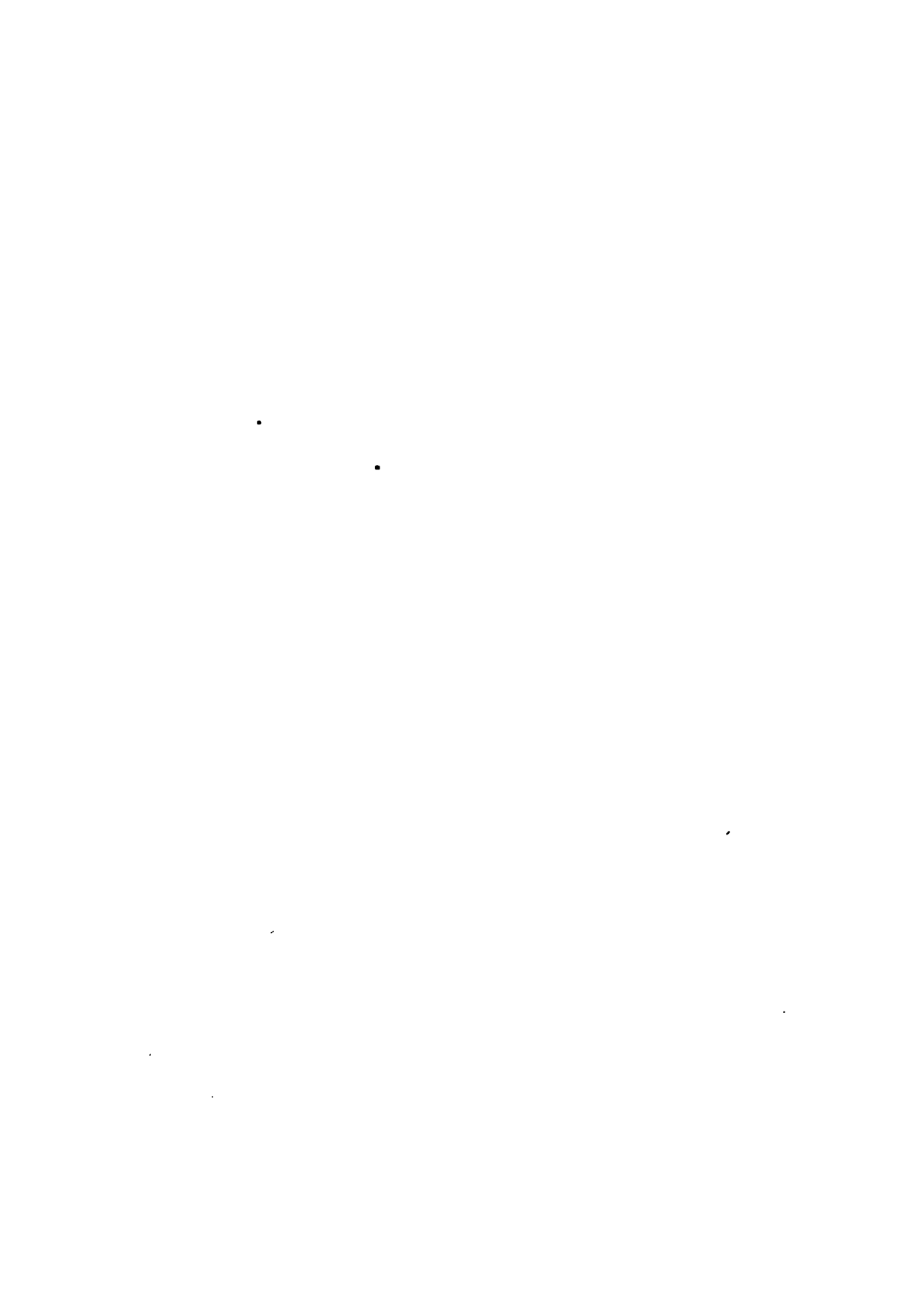
Ground cannot be made too clean or fine for the reception of the seed—cleansing crops for the purpose—should be sown as fresh as possible—proportion of seed in the broad-cast and drill methods—February or March, in most cases, the best periods for sowing the seeds—most adviseable methods of sowing with this intention.

Experimental cultivators—cut for hay, instead of being pastured—thinner soils seldom cut more than once—deeper kinds two crops—after-grass of saint-foin excellent for weaning and nourishing lambs.

Turf-ashes the best manure—time to put it on—soot found of great utility—proportions to be applied—malt-dust with great success.

In England affords hay of the best and most nutritious quality, and which requires very little trouble in making.

Valuable,





Valuable, as affording a full supply of dry and green food—large in its produce, even on the poorest soils—would it be well to endeavour to encourage its growth on those extensive tracts of land, which yield but a scanty herbage under other modes of cropping?—Not confined in respect to soil, as has been too generally supposed—those of a calcareous and loamy nature the best—stagnant moisture, wet and spongy soils, unfriendly—considerable degree of dryness essentially necessary to the successful cultivation of faint-foin.

*Hedysarum coronarium,*

French honey-suckle.

Irish name, BLASGHEATHUR FRANCAH.

Fl. Rust. t. 115.

May not answer the purposes of feeding cattle on a large scale, as it does not answer the cold of spring well?

Has been much recommended for feeding cattle in the southern parts of Europe—probably of the same qualities with faint-foin, abundant produce, but not perennial.

A paper by Doctor Symmonds, on the climate of Italy, in the 3d vol. of Annals of Agriculture—

ture—a very interesting account of French honey-suckle—particulars—the remarkable Calabrian horses are chiefly supported by it.

*Medica'go sati'va,*

Lucern.

Irish name, MEDICAGA TREABHAMTACH.

Fl. Rust. t. 48. Eng. Bot. v. 25. t. 1749.

May be cultivated with much profit and advantage, as succulent green food, or hay.

Not originally a native of Europe—long time cultivated in the south of Europe—scarcely known in Ireland—Miller—Parkinson—Lisle—Mortimer—Tull—Rocque—their observations.

+ Particularly recommended for foiling horses, and increasing the milk of cows—Haller's opinion of Lucern.

+ Wonderfully productive—from about half an acre, eight tons, two hundred, and forty pounds of good fodder—allows of four or five cuttings in the season.

+ Estimated that one pound of the seed contains 150,000 grains—great latitude therefore for a failure in their vegetative powers—one in three to vegetate 50,000 plants!

Some







Some further instances of immense produce, and its capability of supporting animals, particularly working horses, for a length of time—at first should be given cautiously—acts as a powerful diuretic—sometimes occasions the staggers—pigs devour it greedily!

Soils most suitable to its culture—should not be attempted on such as are retentive of moisture—reasons why—directions for the successful cultivation of lucern—land should be brought into as fine a condition of mould as possible by the usual means.

Seeds of lucern larger, and of a more pale colour than those of clover—perfectly fresh seeds, the most proper for sowing—small seeds, in general, vegetate kindly when new—proportion of seed to be sown—must vary according to the nature of the soil, and other circumstances—from eighteen to twenty pounds broad-cast—drill method considerably less.

Early in the spring months, the most proper season for putting lucern into the ground—seeds very rapid in their vegetation—sooner its rough leaf appears, the better—then out of danger of being injured by the fly.

Manures recommended—clean, well rotted horse-dung perhaps the best?—ashes and soot promote the sprouting up of common plants too much—



much—quantities of manure advised, and the modes of application.

Further particulars on this interesting vegetable.—In the drill method has afforded five full cuttings in the summer at the height of a foot and a half—broad-cast three or four—in soiling must necessarily be different under different circumstances—which for horses, cattle, and swine seems to be the most profitable practice, especially where horses and cattle form a large part of the stock—proportion consumed in soiling cows—care is necessary not to give too much at a time when moist, lest they should be blown with it.

“Statistical Report of the county of Kilkenny”—bees fond of the flowers of lucern—Sir Richard St. George, Bart.—his trials with Cook’s drill machine—the observations on lucern in this Report worthy of attention.

“County of Dublin Report”—Mr. Dutton’s remarks on lucern—seems to hint, that it was formerly much cultivated in Ireland—where?

“County of Sligo Report”—Mr. Wynne has just introduced it (1802) into his farm.

Nothing further on the subject in the different Statistical Reports of Ireland.

George Grierson, Esq.—his communication and practical observations on lucern—highly worthy of attention.

*Medicago*





*Medica'go lupuli'na,*

Trefoil medick.

Irish, MEDICAGA DUBHSIOLACH.

Eng. Bot. v. 14. t. 971. Cat. Syst. Dub. 205.

Fl. Lond. v. 1. t. 116. Fl. Rust. t. 19.

+ In all agricultural writers goes by the name of *trefoil*—distinctions between it and the hop trefoil, and procumbent hop trefoil.—Sweeter food than clover—found on dry hilly sandy banks and pastures—some objections to it as a biennial—quantity of seed to be sown, which may be easily procured, and without much expence—further observations on trefoil—does not injure by blowing cattle, as clover—comes in more early than clover.

As hay does not afford a large produce—but useful in many particulars—seed to be collected in the manner hereafter directed for clover—one acre frequently produces 7 or 8 bushels of clean seed—less valuable as an artificial grass, than clover.

+ Statistical Reports of Ireland—noticed only by two—Down and Kilkenny—Down—succeeds better than clover on clay grounds—is as cheap as hay-seed and much superior for grazing, or cutting green—Kilkenny—some lands laid down with it, and white hay-seed.

*Medica'go falca'ta,*

Yellow medick, butter jugs.

Irish, MEDICAGA BUIGHBHLAITHACH.

Fl. Rust. t. 86. Eng. Bot. v. 15. t. 1016.

X As a hardy perennial may be worthy of cultivation—has not been found in a wild state in Ireland?—Linnæus early recommended it for feeding cattle—Professor Martyn thinks it may be found to be superior to lucern—the late Doctor Withering's thoughts on the subject.

*Medica'go arbore'a,*

Tree medick, or moon trefoil.

Irish, MEDICAGA RASCHRANNACH.

Fl. Rust. t. 100.

X Never can come into general use—Professor Martyn—high and respectable authority for its introduction—the Professor's reasoning on this head—easily refuted.

The heart of the wood in very old trees as hard as ebony—uses applied to.

*Lot'us*





*Lot'us cornicula'tus,*

Bird's foot trefoil.

Irish, UNGEUN COITCHION.

Fl. Ruft. t. 53. Cat. Syft. Dub. 204. Fl. Lond.  
v. 1. t. 108.

Λωτος of Theophrastus and Dioscorides. From  
λωτος sweet.

X Common on most of our good pasture grounds  
—perennial—quality excellent—may be culti-  
vated to good purposes alone—has been mistaken  
for other plants of the same class.—Mr. Ander-  
son, 1st vol. of his Essays—some judicious and  
practical remarks on bird's foot trefoil.

Flowers become green when dried—perhaps  
may afford indigo?

In moist meadows—much higher than the ma-  
jority of the trefoils—makes choice and substan-  
tial hay—may be highly useful for cultivation in  
lands inclined to be wet.

*Anthyllis vulneraria,*

Ladies' finger.

Irish, LUANFHIATGHAL COITCHION,

Eng.



Eng. Bot. t. 104. Cat. Syft. Dub. 195.

Αἰθυλλίς; Dioscorides. Αἰθυλλὴ flos evadens in lanuginem, or floris lanugo: a downy flower.

Highly worthy of confideration—perennial—extremely common on most of our poor sandy soils—thrives luxuriantly in lime-stone situations—favourable to the production of milk—excellent pasturage for sheep.

*Coronilla varia,*

Purple coronilla.

Irish, CORONIN IOLDATHACH.

Fl. Ruft. t. 15.

Subject to the test of further enquiry—advantages in its favour—a native of many of the southern and northern countries—flourishes with us the whole summer and autumn on any soil—among other leguminous vegetables, may afford abundant and palatable food for our different useful animals?

*Galega officinalis,*

Officinal goat's rue.

Irish, GABHARUGH LEIGHAS.

Subject to the test of further enquiry and experiment, as the former.

TREFOILS.





## TREFOILS.

*Trifo'lium re'pens,*

White clover, Dutch clover.

Irish, SEAMAR SEAMROG.

Fl. Rust. t. 34. Fl. Lond. v. 1. t. 139. Cat. Syst.  
Dub. 201. Eng. Bot. v. 25. 1769.

Τριφυλλον of Hippocrates and Dioscorides. From  
 τρις three and φυλλον a leaf.—Flowers of all the  
 species, dried and powdered, have been made  
 into bread.

White clover—our Irish Seamrog—common  
 through the greater part of Europe—seems to  
 come up spontaneously—ashes alone spread on  
 land produce it—this commonly received opinion  
 preposterous in the extreme.

Affords abundance of succulent leaves and  
 stalks—in dry summers highly valuable, affording  
 late food, when other plants are dried up.

Seed has been usually imported from Holland  
 —the quantity astonishing—one seed-shop has been  
 known to sell 50 tons annually—flourishes to a  
 great extent under proper care—instances to this  
 effect—further examples of its value as food for  
 cattle—sheep have been perceived not to be fond  
 of

of white clover?—swine don't eat it?—its introduction into England and Ireland of very late date? agricultural writers of the last century don't notice it.

White clover would appear to be a profitable plant on the more rich and dry, sandy, and loamy soils, and on clayey and turfy grounds, well drained from moisture—a proof of good land, that it runs quickly, without assistance to white clover.

Statistical Reports of Ireland—surprising that so little is said on the subject—Down—white clover much sown—Tyrone—no artificial grasses cultivated, except white and red clover with success on a deep bog, which had been cut out; the principal top-dressing soaper's waste.

*Trifolium pratense,*

Red clover.

Irish, SEAMAR CAPULL;

Fl. Rust. t. 3. Cat. Syst. Dub. 202. Eng. Bot.  
v. 25. t. 1770.

A biennial—pretty common in most parts of the world—grows sometimes to a considerable height—affords a very large produce of leaf and blossom—an ameliorating and improving crop—  
good







good preparation for wheat crops—cultivated with singular advantage on heavy and dry lands—sometimes on deep gravelly sandy soils—best methods of preparing the ground, on which red clover-seed should be sown, and the crops, with which it should be joined—how to choose the seeds with this intention—should be well ripened and perfectly fresh, of a bright appearance, smells sweet, slides easily through the hand, and the purple-coloured seeds much more abundant than those of the yellow cast—proportion of seed necessary to be sown—must vary and depend upon particular circumstances—enumerated—whether steeping the seed occasionally, particularly in dry seasons, be an advantageous practice?—most proper seasons for putting clover-seed into the ground—must be regulated by the crops, with which it is sown—wheat, oats, barley—months recommended—may be cultivated with advantage in certain soils, without being joined with those of the grain kind—joining ray grass-seed in small proportions with clover seed recommended—advantages gained by the practice—attentions to be paid to clover crops in their seedling state.

Clover crops employed in various ways—as hay—green food—or eating them down—their utility and superiority as hay, and proper time for mowing them—high price of clover seeds, a great inducement for suffering the crops to stand



stand for that purpose—how to manage clover crops with this view—precautions to be observed, and the species of animals admissible, when clover crops are to be eaten on the land—in the feeding down of clovers, the plants and animals are frequently injured—animals by what farmers call *blown*—this distension of the stomach accounted for—best means of avoiding the mischief—the different means advised for removing the disease, when it occurs—common strong salt and water, new milk, &c. tar, stabbing the animal in the flank, (which never should be performed by unskilful hands)—long flexible tubes—in the more early stage of distention, a very strong solution of ammonia (volatile salts) in water has been very confidently recommended—the exact spot, where the perforation should be made in the flank—method of using the flexible tube.

From every authentic report, red clover an object of the highest consideration, where much stock is to be maintained—the chief objection to it—means, by which its duration in the ground can be considerably prolonged.

“Statistical report of the county of Derry”—not above 25 years, since red clover was first introduced there.

Down Report—ashes recommended as the best manure for red clover.

Kilkenny





Kilkenny reporter—but partially sown—not used as green food—succeeds peculiarly well in the county of Kilkenny.

County of Meath Report—in certain districts its use not known—reasons assigned by the author—in other districts its value, as a crop, universally known and acknowledged—sheep not subject to the staggers, when fed upon clover in the spring, and on turnips in the winter.

In the Statistical survey of the county of Kildare, just published, the author, speaking of clover, tells us “ that he puts in all his wheat in seven feet beds, covered by the shovel with earth raised by the furrow cutting-plough; when the wheat sowing is finished, he runs the furrow-cutter once in the bottom of each furrow. The stirred earth is left under the frost and winter preparation until the beginning of April. He then sows ten pounds of red clover to the acre on his growing wheat, and a second time shovels the trenches, covering in the clover-seed, and giving the wheat crop *an excellent top-dressing*; by this means he insures a full crop of clover, which he eats off for two years with ewes and lambs, and then, by reversing the beds, break up with oats or wheat.”

*Trifolium*

*Trifolium me'dium,*

Perennial red clover—marl-grafs—cow-grafs?

Irish, SEAMAR SEANGAN.

Fl. Ruft. t. 2. Eng. Bot. t. 190. Cat. Syft. Dub.  
202.

Is it the fashionable cow-grafs?—unquestionably more durable than red clover—Mr. Young's opinion of this perennial red-clover, and the grounds, on which it best succeeds.—Sir John Sinclair—high authority—of great utility, when sown with other graffes, where the lands are to remain in a state of grafs—*true* cow-grafs appears to be very different from this and the last—perhaps the common *wild* red-clover?—much variety takes place in the broad purple clovers in their wild state—Mr. Lisle's observations—though made a century back, clear and expreffive on this head.—Cattle not fond of it, till it is touched by the frost?—Withering denies its being the *true* marl-grafs—true marl-grafs—the native wild red clover?

Statistical report of the county of Tyrone—perennial clover, or cow-grafs, called *horfe shamrock*—to be met with in strong foils and cold clays, is very durable and spreads fast.

*Trifo'lium*







*Trifolium fragiferum,*

Strawberry-headed trefoil.

Irish name, SEAMAR SUTHLAR.

Eng. Bot. v. 15. t. 1050. Cat. Syst. Dub. 203.

Fl. Lond. v. 1. t. 93.

Very few remarks necessary to be made on this perennial trefoil—the strawberry-headed-like appearance of its inflated husks, when ripe, readily distinguishes it from white clover.—Mr. Baker, who belonged to the Dublin Society many years back—his observations on this trefoil—borders highly on the marvellous—one—when sown, grows to the length of seven feet!!!—white clover, a much stronger plant, and to be preferred in every point of view.

*Trifolium agrarium,*

Hop-trefoil.

Fl. Lond. v. 1. t. 161?

Irish name, SEAMAR OBCHEANNACH.

Clearly ascertained not to be indigenous with us—*trifolium procumbens*, or procumbent hop-trefoil, for a long time mistaken for the *agrarium*, which last is a much larger plant—therefore more valuable for cultivation.

*Trifolium*



*Trifolium procumbens,*

Procumbent hop-trefoil.

Irish name, SEAMAR SINEADH.

Fl. Ruft. t. 121. Fl. Lond. v. 2. t. 311. Eng.

Bot. v. 14. t. 945. Cat. Syft. Dub. 203? 204.

Common on dry meadows and pastures—when luxuriant, resembles much the last—as they are annuals, scarcely worth cultivating—however all the trefoils may be considered as valuable—affording good pasturage, and food for cattle.

*Trifolium melilotus officinalis,*

Common melilot trefoil.

Irish name, SEAMAR MELODAGH.

Fl. Ruft. t. 72. Eng. Bot. v. 19. t. 1340. Cat.

Syft. Dub. 200.

On ditch-banks in stiff soils—in corn fields, and from which it should be extirpated, being a very bad plant among bread corn—a few seeds, ground with corn, impart a very offensive taste—whole plant a peculiar smell—more fragrant, when dried—distilled water from the flowers improves the odour of other substances—horses remarkably fond





fond of this trefoil—Italian writers—*trifolium caballinum*, horse-trefoil—bees remarkably attached to the flowers.

Shrubby variety, with white flowers—bears repeated cuttings—recommended by Mr. Tighe, in his erudite and scientific “Statistical Report of the County of Kilkenny.”

## **VETCHES.**

## VETCHES.

*Vicia sativa*,

Common vetch.

Irish name, PESSEIR CAPULL.

Fl. Rust. t. 116. Eng. Bot. t. 334. Cat. Syft.  
Dub. 198.

Cultivated much—for feed, as green fodder, or an ameliorating crop—fattens cattle and sheep expeditiously—a good preparative for grain crops—advantages gained by the practice—amongst others, waste lands, &c. rendered by many degrees more valuable.

Distinguished into winter and spring vetch—is the latter less hardy in its habits than the former? no botanical difference between the two—various experiments to ascertain the difference in respect to hardiness—a few, as communicated by Mr. Young—result—a material difference in the natural qualities of the two varieties.

Seeds alike in every external characteristic—is there a difference on the appearance of the blade?—seed leaf of winter vetch, fresh green colour?—spring, of a brown dusky hue?—Vetches grow  
without





without difficulty on all the various soils—flourish vigorously on gravelly loams not too wet.—Granting there is a difference in the constitution of the two varieties—should therefore be kept distinct—liable to be mixed in the seed-shops—the cultivator ought to preserve his own seed to insure his crop—steeping the seed in dry seasons accelerate vegetation?—Quantity of seed to be sown—according to the nature of the soils, methods adopted, and many other circumstances.—Periods of sowing—winter sowings between September and October—reasons why—spring sowings, from the beginning of March to the end of April—sooner the better—advantages gained.—Methods of sowing—mostly broad-cast—attentions requisite in the performance.

Making vetches into hay—management necessary—of the most nutritious quality—green vetches, about twelve tons an acre!—made into hay, about three!—undoubtedly large—reasons assigned for this large produce.—Produce of seed an acre—sometimes from three to six sacks—forty English bushels have been obtained.

Vetches, supposed to support more stock, as hearty and nourishing food, than any other vegetable—instances adduced—hogs foiled upon them, without any other food—cows give much milk, and more butter, when fed with them, than with



any other food whatever.—Vetches, excellent preparation for wheat on certain soils.

“County of Kilkenny Statistical Report”—vetches very little sown.

“County of Meath”—species of vetches numerous!—winter, should be sown from August to October—practical observations on winter and spring vetches—time for cutting—when the pod begins to form, and while the blossoms remain on the stem.

“County of Dublin Report”—Mr. Dutton, with great justice, seems surprised, that the difference between spring and winter vetches is not clearly known—facts with respect to their respective vegetative powers at certain seasons—cut both ways.

“Statistical Survey of the County of Kildare,”  
 “Vetches promise to be of the greatest use in agriculture, as they will grow in the poorest and most exhausted stubble. They certainly check all annuals, and leave the ground in an apparent good state for wheat. Vetches should be put into three feet drills, which admit of the intervals being frequently stirred; the landing of them will strengthen and support; the admission of air in the intervals will keep the plants sweet and nutritious as food, and prevent the mouldiness, which is a constant attendant on the broad-cast way.”—And again, in the same Survey, p. 176,  
 there





there appears to be a very interesting, and full communication “ *On the culture of Vetches.*”

*Vi'cia se'pium,*

Bush vetch.

Irish name, PESSER DUBH.

Eng. Bot. v. 22. t. 1515.

As a perennial, an evergreen, and very productive, would appear to be very proper to intermix with grass-seeds for laying down lands intended for pasturage—palatable to cattle of every species—shoots more early in the spring than any plant eaten by them—vegetates late in the autumn—green all the winter—other circumstances in its favour.

Difficult to collect the seed—causes.

Bath Papers, 3d. vol.—cut five times in a year—under nice cultivation, produced at the rate of twenty-four tons an acre green food—dried, four tons and a half—perhaps difficult to cultivate on a large scale?—reasons assigned.

Appears to thrive best on clayey soils—abounds much in foliage—seeds similar to our common vetch.

*Vicia cracca,*

Tufted vetch.

Irish name, PESSEIR BADANACH.

Fl. Lond. v. 2. t. 319. Fl. Ruft. t. 117. Eng.  
Bot. v. 17. t. 1168. Cat. Syst. Dub. 197.

Very common, running up many of our hedges—very easily cultivated—affords much foliage—might be useful like other vetches made into hay, or used as green food.

In Mr. Dutton's Report, two species of wild vetches, that deserve much attention—*vicia sylvatica*,\* wood-vetch, and this.

Both yield abundance of feed.

*La'thyrus latifolius,*

Broad-leaved pease, everlasting vetchling.

Irish name, FIATGHAIL LEATHANDHUILLEACH.

Fl. Ruft. t. 8. Eng. Bot. v. 16. t. 1108.

Yields a prodigious supply, even on a poor soil—a fit object for agricultural experiments—not met with in a wild state in this kingdom?—in most

\* Eng. Bot. t. 79. Cat. Syst. Dub. 197.

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most of our shrubberies, frequently climbing many feet high—cattle eat it with much relish—highly nutritious.—Doctor Anderson's opinion of it long since.

*La'thyrus pratensis,*

Common yellow vetchling.

Irish name, FIATGHAIL LEANA.

Fl. Lond. v. 1. t. 173. Fl. Ruft. t. 52. Eng.  
Bot. v. 10. t. 670. Cat. Syst. Dub. 196.

To be met with in many situations, as in woods, pastures, &c.—premiums offered for its cultivation in England—excellent food for cattle.—Mr. Swayne's opinion of it—Professor Martyn's queries on leguminous plants in general—Anderson's remarks on this vetchling—worthy of attention. Mr. Young seems to think well of it.

“Kilkenny Report”—presence of this plant, evidence of a good soil—common in the best grounds—should be introduced into cultivation.

*O'robis*



*Orobos tuberosus*,

Heath-pease.

Irish name, CARRAMEILGHE CNAPPACH.

Fl. Lond. v. 1. t. 22. Eng. Bot. v. 17. t. 1153.  
Cat. Syst. Dub. 196.

ορβος of Theophrastus and Dioscorides, from ορβω  
excito, and βους, bos, being used by the ancients  
for fattening oxen.

Not immediately connected with our present  
inquiry, as food for cattle—found on most of our  
mountains, and in many of our woods—roots  
large, tuberous, and sweet.—Highlanders chew  
them, to give a better relish to their liquor—other  
qualities attributed to them.

ARTIFICIAL





**ARTIFICIAL GRASSES**, including **VETCHES**, being fully considered, other vegetables of a miscellaneous nature merit the particular attention of the farmer—but previous to their consideration, perhaps it may be necessary to impress on the minds of those engaged in rural affairs, how necessary it is, that the farmer's attention should be assiduously directed, and encouragement held out to him, to encourage the growth of plants, of the leguminous description, which have been already noticed, as they are not only very productive in respect to quality of food, but, from every source of information, highly nutritious and fattening; and, besides, all our live-stock most anxiously and eagerly feed upon them. Some may appear to be rather of a coarse nature, but we are not hastily to conclude, that they are of no use, and condemn them, but that, under certain circumstances, and judicious management, they may turn out to be very valuable.

*Achillea Millefolium,*

Yarrow.

Irish name, **ATHAIRTHALMHUIN COITCHION**.

Fl. Lond. v. 2. t. 373. Fl. Rust. t. 123. Eng.  
Bot. v. 11. t. 758. Cat. Syst. Dub. 237.

Very common—forms the principal herbage of many fine rich pastures—appears to be much relished

lished by cattle and sheep—predominant on all our descriptions of soils—resists the effects of drought—merits much attention in many points of view—may be of service to cattle medicinally?—scab in sheep, cured by an ointment made with the fresh leaves—in Sweden used in the place of hops.—Mr. Anderson speaks highly of yarrow—his observations.

Mr. Tighe, the able Reporter of the county of Kilkenny, tells us, that sheep appear to be very fond of yarrow, and which they never suffer to flower; he observes, that a field, remarkable for fattening sheep, had a large quantity of it, which grew with remarkable luxuriance near a lime-kiln.

*Planta'go lanceola'ta,*

Rib-grass.

Irish name, CRUACHPHADRUIC SLANLUS.

Fl. Lond. v. 1. t. 85. Fl. Rust. t. 67. Eng. Bot. v. 8. t. 507. Cat. Syst. Dub. 38.

No plant more common—a great diversity of opinion as to its agricultural merits—Mr. Young and Mr. Anderson think well of it—Mr. Curtis, a favourite food for sheep—his further remarks on it. Professor Martyn, no high opinion of it—its non-appearance in marshy lands, an unerring indication of their poverty.—Mr. Dickinson and  
Doctor





Doctor Withering's opinion of rib-grass—from the latest and highest authorities, highly relished by neat-cattle and horses.—Lands most proper for its successful cultivation—Mr. Marshall, Rural Economy of Yorkshire, in much esteem for sheep-feed—improper for hay—reasons assigned.

The plantago tenuifolia, grass-leaved plantain, recommended by some very late agricultural writers—undoubtedly plantago maritima,\* sea-plantain—proves the necessity of botanical knowledge to the agriculturist—properties attributed to sea-plantain—amongst others, cattle, sheep, and horses eat it with greediness, particularly sheep, who pare it as close as possible.

*Pote'rium Sanguisor'ba,*

Common burnet.

Irish name, NAMHNEIGH FIADHAIN.

Fl. Lond. v. 1. t. 88. Fl. Ruft. t. 69. Eng.

Bot. v. 12. t. 860. Cat. Syst. Dub. 257.

Ποτηγίον of Dioscorides. From ποτηγίον, a cup.

Common on high mountainous calcareous soils—leaves smell, and taste like cucumber—principal use, for sheep-pasture—succeeds on many of our grounds—as food for sheep in certain parts of England, forms almost the whole of the herbage  
over

\* Eng. Bot. t. 175. Cat. Syst. Dub. 24.



over a great extent—a very early bite for sheep and cattle—sometimes in the latter end of January—to be used in its more tender and young state of growth—has afforded three cuttings in the season—affected less by severe winter weather, than most other herbaceous plants—resists the effects of drought in a remarkable degree—affords a large produce in hay—cautions necessary with this intention—horses sometimes fed with the seeds and chaffy materials—best means of being supplied with good feed—on grounds intended for sheep-pastures, should be sown broad-cast.—Cows prefer burnet to clover—causes of its failure sometimes in cultivation.

*Sanguisorba officinalis*,\* great burnet—by a common observer, might be taken for our common burnet—is coarse, and not at all acceptable to cattle—not to be met with in a wild state in Ireland?

*Cichorium Intybus*,

Chicory.

Irish name, ENDIVIA SIUCHAIR.

Fl. Ruft. t. 144. Fl. Lond. v. 1. t. 144. Eng. Bot. v. 8. t. 539. Cat. Syst. Dub. 218.

Introduced into England in 1788, as food for cattle—in many of the volumes of Annals of Agriculture,

\* Fl. Ruft t. 142. Eng. Bot. v. 19. t. 1312.





Agriculture, recommended as an object of high importance in agriculture, for the summer feeding of cattle, horses, and sheep—very large and succulent under cultivation—resists the heaviest rains, and severest blasts—defies drought, and the most sharp cold—allows of from two to four cuttings in the year, according to circumstances—cut for soiling as wanted—affords a fresh supply of food for seven or eight months—roots dried, and powdered, have been made into bread.

Soils, on which it best succeeds—preparation of the soil—less particular than many other similar plants as to soil.

Like most other seeds used in agriculture, liable to be mixed in the seed-shops—should be saved by the cultivator himself—when new, vegetate in a most perfect and quick manner.—Quantity to be sown per acre—according to the nature of the land, intentions of the farmer, &c.—usual proportion, from ten to twelve pounds—in the row method, from seven to eight pounds—a full portion should be always sown, chicory not being of the tillering or spreading kind.

Periods of sowing—must depend upon the particular views of the cultivator—*without* other crops from the middle of March till the latter end of summer—*with* other crops—must depend upon the season, when such are sown—generally sown broad-cast—considered likewise as well adapted to  
the

the row-method of cultivation—reasons assigned for both practices.

Averaged produce of chicory for four years, cut green, according to Mr. Young—thirty tons an acre!

Comparative experiments of stall-feeding eight bullocks with chicory and vetches, Ann. of Agriculture, vol. 20th—its utility as pasturage by other statements, Ann. of Agriculture, vol. 15th. —Further observations and experiments on this highly valuable herbaecous succulent perennial, Ann. of Agriculture, vol. 28th.

*Polyg'onum Fugopy'rum,*

Buck-wheat knot-grafs.

Irish name, GLUNEAGH ROMHAN.

Fl. Ruft. t. 46. Eng. Bot. v. 15. t. 1044.

Πολυγονον of Dioscorides. From πολυ and γονυ, on account of many knots in the stalks.

Should buck-wheat be considered as indigenous either in England or Ireland, though it is now and then to be met with about cultivated grounds?

In many parts of the Continent a very common crop—with us scarcely known as a crop.—Seeds afford

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afford a nutritious meal—further particulars as to its value in this last point of view.

A diversity of opinion as to the value of buck-wheat in England—grows on most kinds of soils, provided they be dry, especially those of a sandy nature.

Preparation of the land for the reception of the seed—proportions of the seed to be sown—fit times for sowing—methods—generally broad-cast, well harrowed in.

Application of the crop—for seed, used as green fodder, or ploughed in as manure.

Produce of seed—which is used in England for feeding horses, fattening hogs, and keeping poultry—increases the flow of milk in milch-cows very considerably—effects on hogs.

Directions for ploughing it in for the purpose of manure—scientific, new, and interesting—applicable to many other succulent green vegetables, treated with the same intention.

Buck-wheat, an excellent crop for sowing grass-seeds with—with vetches, a most excellent preparation for wheat.

Mr. Young's sentiments on the combination of crops.

In harvesting buck-wheat, care should be taken that it do not shed.

## CONCLUSION.



## CONCLUSION.

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A FEW general observations on our common soils, so far as regards the most approved methods of disposing of artificial grasses, conjoined with our common meadow and pasture grasses on such soils.

Meadow and pasture grasses very fully considered upon a former occasion—herbaceous plants, which have engaged our attention lately, may be arranged and found useful in respect to soils, somewhat in the manner now to be described—the information taken from the best, the most authentic, and recent authorities.

## SOILS.

### CLAYEY SOILS.

Perennial clover or cow-grass—trefoil—united with certain of the meadow and pasture grasses—such enumerated and exhibited.

LOAMY





### LOAMY SOILS.

White clover—yarrow—lucerne—united with certain of the meadow and pasture-grasses—such enumerated and exhibited.

### SANDY SOILS.

White clover—yarrow—burnet—trefoil—rib-grass—with certain of the meadow and pasture-grasses—such enumerated and exhibited.

### COMPLETE CALCAREOUS SOILS.

Yarrow—saint-foin—burnet—trefoil—white clover.

### BOGGY AND TURFY SOILS.

White clover—rib-grass—united with certain of the meadow and pasture-grasses—such enumerated and described.

Variations of soil—preparation of the lands, and some other circumstances may alter this general arrangement.

EARLY

## EARLY HERBAGE,

May be looked up to in the following routine,  
and stand in this order :

### *Meadow and Pasture Grasses.*

Sweet-scented vernal — meadow fox-tail —  
smooth-stalked meadow — rough-stalked meadow —  
tall oat — rough cock's-foot — hard fescue.

### *Artificial, or Sown Grasses.*

Burnet — rib-grass — ray-grass — trefoil — red  
clover.

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Are grasses, or other plants, which abound in  
sweet jointed succulent stems, and abundant  
foliage, the most nutritious? — convincing reason-  
ings, and satisfactory facts to prove they are.

## PROPORTIONS





**PROPORTIONS OF SEEDS TO BE SOWN ON THE  
DIFFERENT SOILS.**

**Preliminaries to be observed and attended to—**  
old tillage land, in general, requires a much larger proportion of seed, than those more recently broken up—cold exposed situations require a greater quantity of seed than those, that are low and warm—lands designed for pasture, a larger proportion than when hay is the principal object.

**CLAYEY SOILS.**

Perennial clover, or cow-grass, five pounds—  
trefoil, five pounds—crested-dog's-tail, ten pounds  
—meadow-fescue, one bushel—meadow-fox-tail,  
one bushel—on the heavy sorts of land, that are  
to be broken up in a year or two, from ten to  
fourteen pounds red clover—when to remain per-  
manent—perennial clover, or cow-grass, from  
four to six pounds—white clover, four pounds.

**LOAMY SOILS.**

White clover, five pounds—crested dog's-tail,  
ten pounds—ray-grass, one peck—meadow-fescue,  
three pecks—meadow-fox-tail, three pecks—  
D yarrow,



yarrow, two pecks—further observations to be attended to.

#### SANDY SOILS.

White clover, seven pounds—trefoil, five pounds—burnet, six pounds—ray-grafs, one peck—yarrow, one peck—rib-grafs, four pounds—many experienced farmers in England advise only five pounds of white clover and trefoil, with a bushel of ray-grafs, and about an equal quantity of collected grafs-seeds.

#### CALCAREOUS SOILS.

Burnet, ten pounds—trefoil, five pounds—white clover, five pounds—yarrow, or ray-grafs, one bushel—saint-foin much recommended—other circumstances to be attended to.

#### TURFY, OR BOGGY SOILS.

White clover, ten pounds—crested dog's-tail, ten pounds—ray-grafs, one peck—meadow-fox-tail, two pecks—meadow-fescue, two pecks—cat's-tail, one peck.

Of





Of much importance, that a full proportion of seed should be sown in every instance, where the land is designed for pasturage.

In the "*Sketch of Lectures on Meadow and Pasture Grasses*," and in the present "*Sketch*," the proportions of grass-seeds recommended per acre for laying down land for the purpose of good meadows, and the several species, whether natural or artificial, either for a convertible system of corn and grass, or for lands that are to be kept in a permanent state of sheep-pasture, were enumerated and enlarged upon.—A recapitulation of such—some necessary observations and useful remarks—a general comment on the whole.



















